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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,630	01/12/2004	Christian Jackson	IJ0049USNA	9393
23906 7590 08/20/2007 E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805			EXAMINER MARTIN, LAURA E	
			ART UNIT 2853	PAPER NUMBER
			MAIL DATE 08/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/755,630

Applicant(s)

JACKSON ET AL.

Examiner

Laura E. Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-8, 10, 14, 15, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuragi et al. (EP 1125994) in view of Yue et al. (US 6461418).

#### **Katsuragi et al. discloses the following claim limitations:**

As per claims 1 and 10, Katsuragi et al. teaches an inkjet ink set and method of inkjet printing a substrate comprising the steps of jetting an ink set onto a substrate, the ink set comprising: a first ink comprising a self-dispersing pigment colorant dispersed in a first aqueous vehicle [0020], [0043], and [0057]; and a fixing fluid comprising a soluble copper salt in a second aqueous vehicle [0049].

As per claims 5, 6, and 17, Katsuragi et al. teaches the ink set and method of claims 1 and 10 further comprising at least four differently colored aqueous pigmented inks, at least one of the colored ink being a first ink ([0051] and [0053]).

As per claims 8 and 19, Katsuragi et al. teaches a self-dispersing carbon black pigment comprising anionic hydrophilic moieties [0118].

#### **Katsuragi et al. does not disclose the following claim limitation:**

As per claims 1 and 10, Katsuragi et al. does not teach a soluble polymer binder.

As per claims 2 and 14, Katsuragi et al. does not teach a soluble polymer binder.

As per claims 3 and 15, Katsuragi et al. does not teach a binder being substantially linear, anionic polymer having a number average molecular weight in the range of 1000-20000.

**Yue et al. discloses the following claim limitations:**

As per claims 1 and 10, Yue et al. teaches a comprising a soluble polymer binder (column 3, lines 60-67 - example 2).

As per claims 2 and 14, Yue et al. teaches a soluble polymer binder (column 3, lines 60-67 - example 2).

As per claims 3 and 15, Yue et al. teaches a binder being substantially linear, anionic polymer having a number average molecular weight in the range of 1000-20000 (column 4, lines 15-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink set and method taught by Katsurgai et al. with the disclosure of Yue et al. in order to create a higher quality ink with higher levels of water fastness, light fastness, and rub resistance.

As per claims 7 and 18, Katsuragi et al. as modified discloses the claimed invention except for the soluble copper in the fixing fluid present at a level of at least 0.05 mole/L. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the range of concentrations, since it would have been held that where the general conditions of the claim are disclosed in the prior art,

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discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller* 105 USPQ 233.

Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuragi et al. (EP 1125994) and Yue et al. (US 6461418), and further in view of Ota et al. (US 20020075369)

**Katsuragi et al. as modified discloses:**

Katsuragi et al. as modified teaches an ink set. Katsuragi et al. also teaches a dispersant (commonly applied to ink as a binder) having an number average molecular weight in the range of 1000 to 20000 [0055].

**Katsuragi et al. as modified does not disclose:**

The ink comprising an effective amount of a multivalent cation.

**Ota et al. discloses the following claim limitations:**

The ink comprising an effective amount of a multivalent cation [0043].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink set and method taught by Katsuragi et al. as modified with the disclosure of Ota et al. in order to reduce sedimentation.

Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuragi et al. (EP 1125994) and Yue et al. (US 6461418), and further in view of Suzuki et al. (US 6153001).

Katsuragi et al. as modified teaches a self-dispersing pigment; however, it does not disclose anionic hydrophilic moieties being carboxyl groups.

Suzuki et al. discloses anionic hydrophilic moieties being carboxyl groups (column 7, lines 35-52).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink set and method taught by Katsuragi et al. as modified with the disclosure of Suzuki et al. in order to create a higher quality ink with better stability.

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuragi et al. (EP 1125994) and Yue et al. (US 6461418) in view of Katsuragi et al. (EP 1191077).

Katsuragi et al. ('994) teaches the method of claim 10; however, it does not teach the fixing fluid jetted onto the substrate before the first ink, and the area of the substrate covered by the fixing fluid is substantially covered by the first ink; the area fill of the fixing fluid is less than the area fill of the first ink; and the fixing fluid is applied at an area fill of less than about 60% of the area fill of the first ink.

Katsuragi et al. ('077) teaches the fixing fluid jetted onto the substrate before the first ink, and the area of the substrate covered by the fixing fluid is substantially covered by the first ink [0071]; the area fill of the fixing fluid is less than the area fill of the first ink [0073]; and the fixing fluid is applied at an area fill of less than about 60% of the area fill of the first ink [0073].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Katsuragi et al. ('944) as modified with the disclosure of Katsuragi et al. ('077) in order to improve printing quality.

### ***Response to Arguments***

Applicant's arguments filed 6/29/07 have been fully considered but they are not persuasive.

Applicant argues that the use of the specific self-dispersing pigment ink is paired with the specific type of copper fixing fluid; however, the examiner would like to make note that in the first embodiment of Katsuragi et al., the ink can contain both a self-dispersing pigment and a fixing fluid containing a soluble copper salt. Both of these limitations are taught as being possible components in the same embodiment, thus it is obvious that they could be used together in the ink composition. While the copper salt and self-dispersing pigment may not have been used together in the examples, both have been disclosed as being possible ingredients in the ink composition; nowhere in the specification of Katsuragi et al. does it state that these two components cannot be used together.

Examiner thanks the applicant for the references to the examples of the invention within the specification; however, it does not prove that the results could not have been expected from the prior art by way of a comparison study

Applicant also argues that it would not have been obvious to combine the Katsuragi et al. and Yue et al; however, the examiner disagrees. Both inks have self-

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dispersing pigments. While Katsuragi et al. discloses a fixing solution with a copper salt, it does not disclose the ink having a soluble polymer binder. Yue et al. discloses an ink containing a self-dispersing pigment and a soluble polymer binder; it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Katsuragi et al. with the disclosure of Yue et al. in order to create a stronger ink and more durable image. Yue et al. discloses the ink portion of the invention as a whole; however, it does not teach the fixing solution. It is obvious in the art that many ink sets contain fixing solutions, and it would have been obvious to modify the ink and fixing solution taught by Katsuragi et al. with a slightly different ink containing extra components, especially when these well known, extra components improve the stability of the ink.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura E. Martin

  
8/16/07  
MANISH S. SHAH  
PRIMARY EXAMINER